

What is claimed is

1           1. An image processing apparatus, comprising:  
2           a character-on-half-tone area judgment unit for judging  
3 whether a target pixel is in an edge area of a character that  
4 is present on a half-tone-dot area, using a parameter;  
5           a half-tone-dot characteristic judgment unit for judging  
6 a characteristic of a half-tone-dot area, when the target pixel  
7 is in the half-tone-dot area; and  
8           a selector for switching between a plurality of  
9 parameters to be used by the character-on-half-tone area  
10 judgment unit, based on a judgment result of the half-tone-dot  
11 characteristic judgment unit.

1           2. The image processing apparatus of Claim 1,  
2 wherein the character-on-half-tone area judgment unit  
3 includes:  
4           an edge detection unit for detecting an edge pixel, the  
5 edge pixel being a pixel in an edge area;  
6           an edge pixel counter for counting a number of edge pixels  
7 detected in a predetermined area by the edge detection unit;  
8 and  
9           a comparator for comparing the number of edge pixels  
10 counted by the edge pixel counter with a threshold.

1        3. The image processing apparatus of Claim 2,  
2        wherein the selector switches between a plurality of  
3        thresholds that are the plurality of parameters.

1        4. The image processing apparatus of Claim 1,  
2        wherein the halftone-dot characteristic judgment unit  
3        judges a size of a dot that constitutes the halftone-dot area,  
4        and  
5        the selector switches between the plurality of  
6        parameters, based on the size of the dot.

1        5. The image processing apparatus of Claim 1,  
2        wherein the halftone-dot characteristic judgment unit  
3        includes:

4        an isolated pixel judgment unit for judging that the  
5        target pixel is an isolated pixel, when a relationship between  
6        (a) brightness of the target pixel and (b) brightness of a  
7        plurality of pixels at predetermined positions with respect  
8        to the target pixel satisfies a predetermined condition; and  
9        an isolated pixel counter for counting a number of  
10       isolated pixels in a predetermined area, and

11       the halftone-dot characteristic judgment unit judges  
12       the characteristic of the halftone-dot area, based on the  
13       number of isolated pixels counted by the isolated pixel  
14       counter.

1        6. The image processing apparatus of Claim 5,  
2        wherein the isolated pixel judgment unit includes a  
3        filter used for judging that the target pixel is an isolated  
4        pixel, when the target pixel is included in a dot whose size  
5        is substantially within a predetermined range and that  
6        constitutes the halftone-dot area.

1        7. The image processing apparatus of Claim 5, further  
2        comprising:

3        a second isolated pixel counter for counting a number  
4        of isolated pixels in a predetermined area; and

5        a halftone-dot area judgment unit for judging whether  
6        the target pixel is in a halftone-dot area, by comparing the  
7        number of isolated pixels counted by the second isolated pixel  
8        counter with a threshold.

1        8. The image processing apparatus of Claim 1,  
2        wherein the halftone-dot characteristic judgment unit  
3        judges resolution of the halftone-dot area, and

4        the selector switches between the plurality of  
5        parameters, based on the resolution of the halftone-dot  
6        area.

1        9. The image processing apparatus of Claim 1,

2        wherein the halftone-dot characteristic judgment unit  
3 judges density of the halftone-dot area, and  
4        the selector switches between the plurality of  
5 parameters, based on the density of the halftone-dot area.

1        10. The image processing apparatus of Claim 1, further  
2 comprising  
3        an image correction unit for correcting image data, in  
4 accordance with a judgment result of the character-on-halftone  
5 area judgment unit.

1        11. An image forming apparatus, comprising:  
2        a character-on-halftone area judgment unit for judging  
3 whether a target pixel is in an edge area of a character that  
4 is present on a halftone-dot area, using a parameter;  
5        a halftone-dot characteristic judgment unit for judging  
6 a characteristic of a halftone-dot area, when the target pixel  
7 is in the halftone-dot area; and  
8        a selector for switching between a plurality of  
9 parameters to be used by the character-on-halftone area  
10 judgment unit, based on a judgment result of the halftone-dot  
11 characteristic judgment unit;  
12        an image correction unit for correcting image data, in  
13 accordance with a judgment result of the character-on-halftone  
14 area judgment unit; and

15        an image forming unit for forming an image, based on  
16        the image data corrected by the image correction unit.

1        12. An image forming method, comprising:  
2        a halftone-dot characteristic judgment step of judging  
3        a characteristic of a halftone-dot area, when a target pixel  
4        is in the halftone-dot area;  
5        a parameter determination step of determining, based  
6        on a judgment result in the halftone-dot characteristic  
7        judgment step, a parameter to be used for judging whether  
8        the target pixel is in an edge area of a character that is  
9        present on the halftone-dot area; and  
10       a character-on-halftone area judgment step of judging  
11       whether the target pixel is in an edge area of a character  
12       that is present on the halftone-dot area, using the parameter  
13       determined in the parameter determination step.

1        13. The image processing method of Claim 12,  
2        wherein the halftone-dot characteristic judgment step  
3        includes:  
4        an isolated pixel extraction substep of extracting,  
5        using a filter, an isolated pixel to be used for judging the  
6        characteristic of the halftone-dot area;  
7        an isolated pixel count substep of counting a number  
8        of isolated pixels in a predetermined area; and

9        a halftone-dot characteristic judgment substep of  
10        judging the characteristic of the halftone-dot area, based  
11        on the number of isolated pixels counted in the isolated pixel  
12        count substep.